Abstract

An air flow sensor comprises a flexible resistive element permanently affixed to a flexible substrate. The air flow sensor is positioned in an inlet for airway to be monitored such that the sensor covers the inlet at all times other than during inhalation. When a vacuum is applied to the airway, a resulting drop in air pressure within the airway causes air to flow through the inlet and airway, causing the sensor's substrate to flex. Flexure of the substrate also causes a resistive element to flex, resulting in a change in the electrical resistance of the resistive element, such as an increase in resistance. Flexure of the sensor is enhanced by flexible leads, which serve as a hinge point. An air shield may be positioned around the periphery of the air flow sensor to channel and restrict the movement of air flowing through the air inlet, thereby enhancing movement of the sensor.